FLORIDA POLYTECHNIC UNIVERSITY

Design Thinking

Exploration & Expression

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Preamble

How to Make a Great Product

- Great products come when a solution truly solves a problem.
- Understanding user needs and emotion are key to defining the problem.
- When user needs are truly understood typically high quality solutions come easily and quickly.

***Adapted from MIT Executive Management Education - Mastering Design Thinking**

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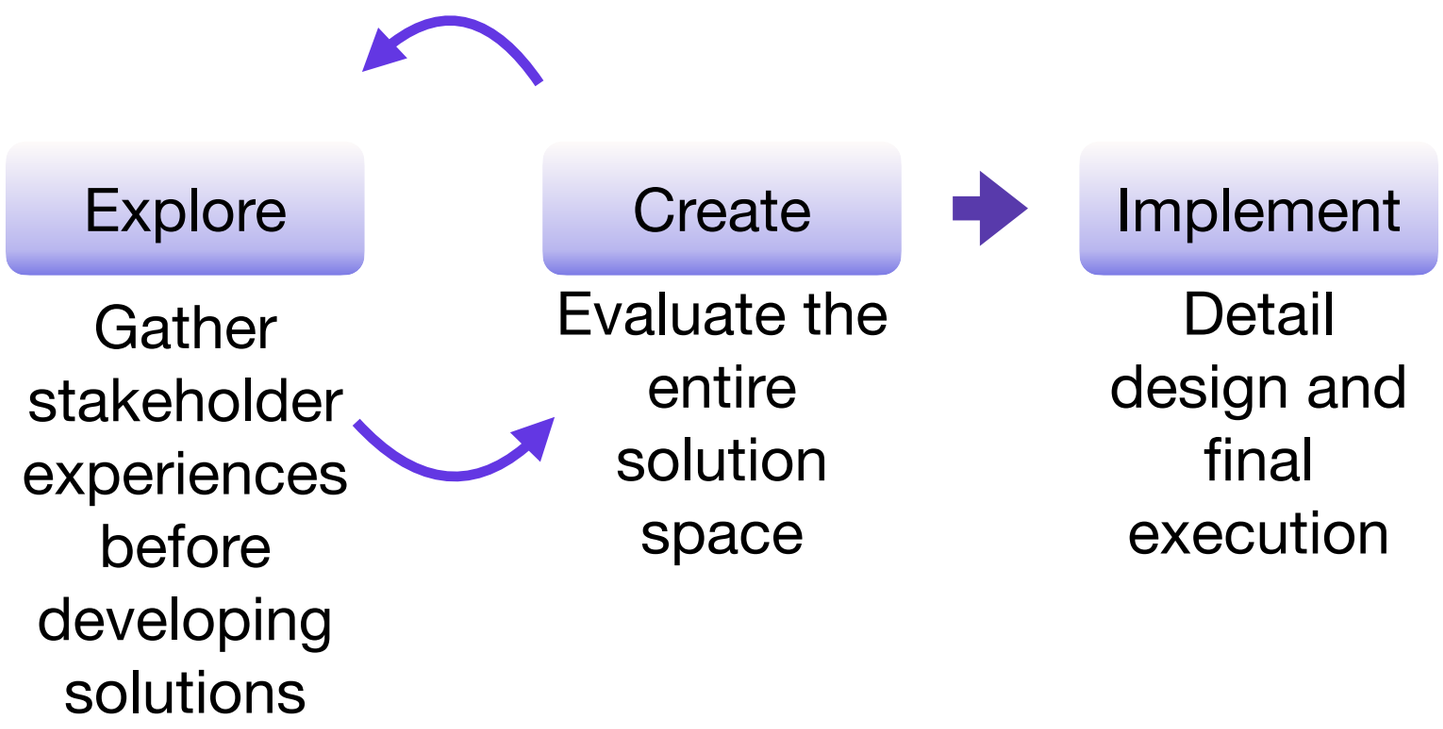
Design Thinking - Explore

Recall



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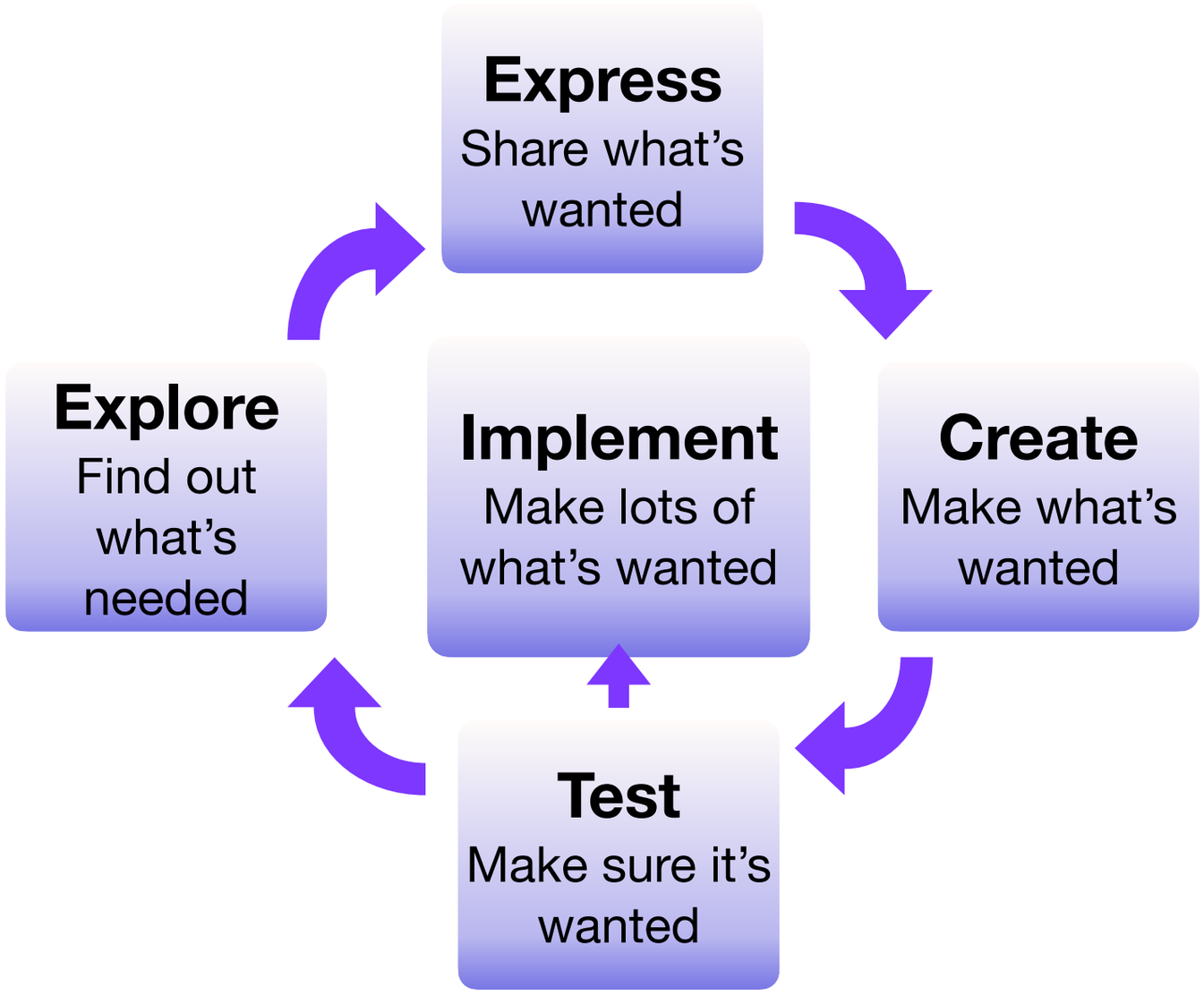
Design Thinking

A New Dimension



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Further Definition

- Identify all stakeholders
- Understand all stakeholder needs, emotions, problems, issues, desires
- Put yourself in their shoes, develop empathy
- Discover latent needs

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General Steps

- Identify stakeholders
- Observe
- Interview

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Interview Guidelines

- Start with broad questions and then become specific
- Do not ask why (challenges their statement)
- Do not ask yes/no questions
- Probe for more information but don’t interrupt the flow
- Circle back to earlier topics for depth
- Be willing to explore tangential topics

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Expression

Why Bother

- Create and transfer empathy to the team and others (instructors)
- Builds consensus of the problem definition/scope
- Allows for consensus when working towards a solution
- Can help settle misunderstandings/disagreements
- Reminds us who the clients/stakeholders are

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Overview

- A story that builds a case
- The problem to be solved is the foundation of the case
- When the problem is clear solutions flow easier
- Creates design team alignment

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Common Methods

- Tell a story
- Needs list
- Customer personas
- Image/Mood boards
- Photos
- Videos
- Experience Map

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Needs List

- A good needs lists captures technical details as well as the spirit of the problem
- Feeds the product specifications and selection matrices
- Can evolve as you learn more about the problem

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Needs List

Guidelines

1. “What” not “How”
2. Specificity
3. Positive not Negative
4. An Attribute of the Product
5. Avoid “Must” and “Should"

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Needs List

An Example - Nest Thermostat

Guideline	Customer Statement	Needs Statement - Wrong ✗	Needs Statement - Right ✔
1. “What” not “How”	I would like my iPhone to adjust my thermostat.	The thermostat is accompanied by a downloadable iPhone app	The thermostat can be controlled remotely without requiring a special device
2. Specificity	I have different heating and cooling systems	The thermostat is versatile	The thermostat can control separate heating and cooling systems.
3. Positive not Negative	I get tired of standing in front of my thermostat to program it	The thermostat does not require me to stand in front of it for programming	The thermostat can be programmed from a comfortable position
4. An Attribute of the Product	I have to manually override the program if I’m home when I shouldn’t be	An occupant’s presence triggers the thermostat to automatically change modes	There thermostat automatically responds to an occupants presence
5.Avoid “Must” and “Should"	I’m worried about how secure my thermostat would be if it were accessible online	There thermostat must be secure from unauthorized access	The thermostat controls are secure from unauthorized access

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Needs List

Organize and Define Importance

- Organize customer needs into categories
  - Using affinity or other methods
- Define a “crude” importance rating system to use before more in-depth trade off analysis has been done
- * moderatley important
- ** very important
- *** highly important
- ! latent need

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